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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,818	07/31/2001	Andrew J. Davenport	YOR920010335	1735

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WHITHAM, CURTIS & CHRISTOFFERSON, P.C.
11491 SUNSET HILLS ROAD
SUITE 340
RESTON, VA 20190

EXAMINER
FELTEN, DANIEL S

ART UNIT	PAPER NUMBER
3624	

DATE MAILED: 04/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/917,818	Lee
Examiner	**Art Unit**
Daniel Felten	3624

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Jan 28, 2003* .

2a) ☒ This action is **FINAL.** 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-11* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. The receipt of the amendment filed January 28, 2003 amending claim 11 is acknowledged. Claims 1-11 are pending in the application and are presented to be examined upon their merits.

Response to Arguments

2. Applicant's arguments filed January 28, 2003 have been fully considered but they are not persuasive. References, in determining obviousness are not read in isolation but for what they fairly teach in combination with prior art as a whole, and thus patent assignee's reference-by-reference attack on prior art to demonstrate non-obviousness is not persuasive (Photoelectric sensing system) Banner engineering v. Tri-Tronics Co. Inc., 29 USPQ 1392 1389 (CAFC 1993 unpub) citing in re Merck, 231 USPQ 375 (CAFC 1986).

It is also respectfully submitted that references are evaluated by what they suggest to one versed in the art, rather than their specific disclosure [see In re Bozek, 163 USPQ 545 (CCPA 1969)]. In this case, the primary reference, Sandholm, discloses a computer implemented method for optimally selecting sets of items having associated valuations the contemplates its use for solving the cost minimization problem within a bid set in a reverse combinatorial auction. The secondary reference, Takriti, discloses a tool for forecasting the spot market-prices of electrical power and trading transaction at different delivery points using statistical modeling demand constraints to manage risk more effectively. The 35 USC 103

rejection set for the above provide reasoning for the combinations of references and resolve the level of ordinary skill in the business art.

In response to applicant's analysis of the references, the examiner respectfully submits that one can not show obviousness by attacking references, individually where, as here the references are based upon the combination of references. Specifically, applicant discusses how Takriti is not relevant to the claimed invention and how a fundamental reworking of the set covering model to incorporate business constraints is required. The deficiencies of the Sandholm reference and its relevance to applicants' invention was addressed in the first Office action dated October 24, 2002. A discussion of these deficiencies are addressed identically below along the relevancy of how Takriti is used to provide statistical modeling constraints to the Sandholm reference.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sandholm (US 6,272,472) in view of Takriti et al (hereinafter "Takriti", US 5,974,403).

Sandholm discloses a method for identifying a cost minimizing bid set for reverse combinatorial auctions (see Sandholm, col. 1, ll. 46-65), the method comprising: introducing a decision variable for each bid (see Sandholm, col. 6, ll. 18-44); introducing a counting variable to indicate whether bids from a supplier are chosen in an optimal bid set (see Sandholm, col. 1, ll. 66 to col. 2, ll. 7); and introducing dummy variables to ensure existence of feasible solutions (see Sandholm, col. 16, ll. 20-22); However, Sandholm fails to teach modeling demand constraints for each item using the bid variables.

Takriti teaches a tool for forecasting the spot-market prices of electrical power and trading transactions at different delivery points using statistical modeling demand constraints to mange risk more effectively and determine electrical power cost minimization (see Takriti, col. 3, ll. 29 to col. 4, ll. 11; and col. 9, ll. 29+). Since, Sandholm contemplates a reverse combinatorial auction wherein a minimized cost is desirable (see Sandholm, col. 1, ll. 62 to col. 2, ll. 7), it would have been obvious for an artisan of ordinary skill at the time of then invention of Sandholm to integrate the modeling of command constraints, as taught by Takriti to provide the bidders an alternative means to provide optimal allocation in a combinatorial auction. Thus such a modification would have constituted an obvious expedient well within the ordinary skill in the art.

Sandholm fails to disclose modeling minimum and maximum numbers of suppliers based on the counting variables. This is taught by Takriti (see Takriti, col. 9, ll. 49+). It would have been obvious for an artisan of ordinary skill in the art to employ the teachings of Takriti to the Sandholm invention because an artisan of ordinary skill in the art would recognize the importance in the number of suppliers to produce a minimum of cost.

formulating an object with the given cost level as a constraint introducing price modifications to handle the formulated objective of choosing bids that arrive early.

5. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandholm (US 6,272,473) as modified by Takriti et al (US 5,974,403) as applied to claim 1 above, and further in view of Rackson et al (US 6,415,270 B1). The teachings of Sandholm as modified by Takriti have been discussed above.

Sandholm as modified by Takriti fails to teach the auction is an single round and/or the auction is a multiple round auction. Rackson discloses both single and multiple round auctions (see Rackson, Abstract). Since Sandholm as modified by Takriti are related to solving combinatorial auction-type problems, it would have been obvious for an artisan of ordinary skill at the time of the invention to employ the teachings of Rackson to the teachings of Sandholm as modified by Takriti because the teachings of utilizing a multi-auction system to detect bids at a plurality of remote auction services for an item in order to replicate the bid at each of the remote auction services, as found in the Rackson invention, would constitute an obvious extension to the teachings of Sandholm as modified by Takriti inasmuch as Sandholm as modified by Takriti would have sought to perform an auction or auctions to provide particular items (or set of items) to bidders. Thus to employ single or multiple round auctions would have been an obvious expedient well within the ordinary skill in the art.

6. Claims 4 and 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandholm (US 6,272, 473) in view of Dwande et al (hereinafter "Dwande", US 6,321,132 B1) and Aggarwal et al (hereinafter "Aggarwal").

Regarding claim 4:

Sandholm contemplates a method for implementing a reverse combinatorial auction in which items of varying quantities are purchased (see Sandholm, col. 1, ll. 62-65), defining one or more parameters for the auction (see Sandholm, col. 1, ll. 66 to col. 2, ll. 7); accepting bids for a plurality of items in the auction (see Sandholm, col. 1, ll. 40+); and determining a cost-minimizing bid set based on a implementation of the computer-implemented representation (see Sandholm, col. 3 , ll. 9+).

Sandholm fails to disclose creating a set-covering formulation from the bids. Dawande teaches the use of set covering formulation approach as a solution for slab covering design, which is as follows:

> Given a base set S and a collection, F (or F subsets of S), find a collection B* (or B* subsets of F) such that this collection covers all the members of S and that the number of subsets in this collection is minimum (see Dawande, col. 6, ll. 37+).

It would have been obvious for an artisan or ordinary skill at the time of the invention of Sandholm to employ the set covering method taught by Dawande into the teachings of Sandholm because an artisan at the time of the invention of Sandholm would recognize the advantage of using the set covering method in a combinatorial auction to minimize computational cost and optimize valuation of bid sets. Thus to employ the set covering formulation as taught by Dawande into the Sandholm invention would have provided and an alternative means to optimize valuation of bid sets and thus have been an obvious extension to the teachings of Sandholm as well as an obvious expedient well within the ordinary skill in the art.

Sandholm fails to disclose adding predetermined business rules as a constraint to the set-covering formulation. Dawande teaches a set of "compatibility conditions" that are used in the set-covering formulation as constraints. Aggarwal teaches using business rules as constraints to set-covering formulation, automatically generating a computer-implemented representation of the set-covering formulation as constrained by the business rules;(see Aggarwal, col. 4, ll. 24+). It would have been obvious for an artisan of ordinary skill in the art at the time of the Sandholm invention to employ certain constraints (or business rules) as part of the set-covering formulation to further define item/bid sets. Thus such a modification would have been an obvious expedient well within the ordinary skill in the art.

Regarding claims 6-11:

Sandholm in view of Dwande and Aggarwal teaches all the limitations within the above mentioned claims which further defines the use of a set covering method (see Dwande, col. 6, ll. 36+). The reasons for implementation of the set-cover formulation method to the particular problem of combinatorial auction as taught in Sandholm has been addressed above in claim 4 and is further used to reject claims 6-11.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sandholm (US 6,272, 473) as modified by Dwande et al (hereinafter "Dwande", US 6,321,132 B1) and Aggarwal et al (hereinafter "Aggarwal") as applied to claim 4 above, and further in view of Rackson et al.

Since Sandholm as modified by Dwande contemplate solving a reverse combinatorial auction-type problem (see Sandholm, col. 1, ll. 60-65), it would have been obvious for an

artisan of ordinary skill at the time of the invention to employ the teachings of Rackson to the teachings of Sandholm as modified by Dwande because the teachings of utilizing a multi-auction system to detect bids at a plurality of remote auction services for an item in order to replicate the bid at each of the remote auction services, as found in the Rackson invention, would constitute an obvious extension to the teachings of Sandholm as modified by Dwande inasmuch as Sandholm as modified by Dwande would have sought to perform single and multiple auctions to sell particular items (or set of items) to bidders. Thus to employ single or multiple round auctions would have been an obvious expedient well within the ordinary skill in the art.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ***Daniel S. Felten*** whose telephone number is (703) 305-0724. The examiner can normally be reached between the hours of 7:00AM to 5:30PM Monday-Thursday. Any inquiry of a general nature relating to the status of this application or its proceedings should be directed to the Customer Service Office (703) 306-5631, or the examiner's supervisor ***Vincent Millin*** whose telephone number is (703) 308-1065.

10. Response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

for formal communications intended for entry, or (703) 305-0040, for informal or draft communications, please label "Proposed" or "Draft".

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to *[daniel.felten@uspto.gov]*.

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1 195 OG 89.

DSF
April 17, 2002

VINCENT MILLIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100